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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,457	07/19/2006	Yumi Muroi	125404	4636

25944 7590 09/30/2008

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EXAMINER	
KEMMERLE III, RUSSELL J	
ART UNIT	PAPER NUMBER
1791	

MAIL DATE	DELIVERY MODE
09/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/550,457	MUROI ET AL.	
	Examiner	Art Unit	
	RUSSELL J. KEMMERLE III	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09 September 2008 has been entered.

Claim Rejections - 35 USC § 103

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa (JP Patent Publication 2002-201082, as discussed in applicant's current specification, identified in the previous Office Action as "Shuichi") in view of Suzuki (US Patent 4,354,991) and Kani (JP Patent Publication 61-026565). Citations to Kani refer to where that information can be found in the translation accompanying the previous Office Action.

Ichikawa discloses a method of making a silicon carbide (SiC) honeycomb structure by mixing and kneading a combination of SiC, metal Si, an organic binder and an alkaline earth metal to form a clay. This clay is then shaped into a honeycomb structure, heated to remove the binder, then fired to form the finished body (see applicant's current specification, page 1).

Ichikawa as discussed by the applicant does not disclose that the firing be performed in a protective container made of SiC, or that an aluminum containing solid also be placed in the container during firing.

Suzuki discloses a method of making a SiC body where the shaped SiC body is fired in a container made of SiC, in order to control the atmosphere during firing and create a finished product having a superior surface (Col 6 lines 20-33).

Kani discloses a method of making a SiC body that involves molding and sintering a shaped SiC body, where the sintering occurs with an aluminum (Al)-containing substance present with the body (page 2, claim 1). Kani further discloses that this can be achieved by placing a lump (i.e., a block body) of Al metal with the green SiC body in a crucible with a lid during sintering, and the quantity of Al should be from 0.01-5% by weight based on the weight of the SiC body (paragraph spanning pages 6-7).

It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant, to have modified the method taught by Ichikawa, by firing the ceramic in a SiC crucible having an Al-containing material present in the crucible during firing. This would have been obvious because Suzuki discloses that placing the body in a SiC crucible during firing creates a desirable product without the need for hot pressing, and Kani discloses that placing an Al-containing material in the crucible during firing produces the desired result of Al as a sintering aid without having the Al as an impurity in the final piece.

The references as discussed above do not discuss a specific separation distance between the Al-containing body and the SiC body. However, one of ordinary skill in the art would know that the Al-containing body should be close to the SiC body in order for the Al vapor to easily reach the body, but not in contact with the SiC body as that would cause them to sinter together. Therefore optimizing the placement of the articles to within 50 cm of each other would be within the ability of one skilled in the art to create a situation where the Al vapors act on the SiC body during sintering, but they two materials do not sinter to each other. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (prior art suggested proportional balancing to achieve desired results in the formation of an alloy).

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa in view of Suzuki and Kani, in further view of Arakawa (JP Patent Publication 61-291461, translation previously provided). Citations to Kani and Arakawa refer to where that information can be found in the translation accompanying the previous Office Action.

Ichikawa, Suzuki and Kani are relied upon as discussed above in the rejection of claim 1, including teaching Al of 0.1-5 wt%

Referring to claim 2, while Kani discloses specific examples using Al metal, Kani also says that any Al-containing material which will produce Al vapor during sintering would work (paragraph bridges pages 6 and 7), although not specifically disclosing the use of aluminum in oxide form.

Arakawa discloses a process for firing a SiC body in the presence of an aluminum vapor source, specifically mentioning the use of aluminum oxide as the vapor source (page 5).

It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant to have modified the method of Ichikawa, Suzuki and Kani as discussed above by using aluminum oxide as the vapor source since Kani calls for any material that will produce Al vapor during firing and Arakawa discloses that aluminum oxide is such a material.

Referring to claim 3, since the block body using the materials of the present invention is found to be obvious, as discussed above, a block body having the specific properties recited, including water absorption, (which would be dependant mostly on the material) is also found to be obvious.

Response to Arguments

Applicant's arguments filed 09 September 2008 have been fully considered but they are not persuasive.

Applicant first argues that the prior art of record does not disclose that the Al containing material be at a distance of 50 cm or less from the SiC body. This is not found to be persuasive because it has never been suggested that such was explicitly taught by the prior art of record. Instead it is found that the prior art teaches that the Al containing body be placed at some distance from the SiC body, and that it would have been obvious to one of ordinary skill in the art to optimize that distance in order to achieve the desired properties, as discussed above.

Applicant's arguments with respect to claims 2 and 3 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RUSSELL J. KEMMERLE III whose telephone number is (571)272-6509. The examiner can normally be reached on Monday through Thursday, 7:00-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. J. K./
Examiner, Art Unit 1791
/ Carlos Lopez/
Primary Examiner, Art Unit 1791